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BEFORE THE BOARD OF PATENT APPEALS

AND INTERFERENCES

MAILED

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GROUP 1600

Application Number: 10/665,343

Filing Date: September 18, 2003

Appellant(s): DIEHL ET AL.

Kenneth Crimaldi

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 10/15/2007 appealing from the Office action mailed on 06/11/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,361,788

Antoni-Zimmermann et al.

3-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3 and 7-12 rejected under 35 U.S.C. 103(a) as being unpatentable over ANTONI-ZIMMERMANN et al.¹ See the entire document especially abstract of the invention, lines 3-67 in column 2; lines 1-67 in column 3; lines 1-67 in column 4; examples and claims.

The reference teaches the synergistic combination of 2-methylisothiazoline and various other active biocidal substances which embraces Applicant's claimed invention. The biocide composition that is improved in its components interact synergistically and therefore can be used in lower concentrations when used simultaneously, compared to the concentrations necessary in the case of the individual components. Thus, humans and the environment are exposed to less pollution and the costs of controlling harmful microorganisms are reduced. This object is achieved by the invention by means of a biocide composition having at least two active biocidal substances, one of which is 2-methylisothiazolin-3-one. The reference further teaches that biocide composition of the invention has the advantage that it can replace active substances used until now in practice, but suffering from disadvantages with respect to health and the environment, e.g., 5-chloro-2-methylisothiazolin-3-one (see lines 3-41 in column 2 and lines 33-38 in column 4). Moreover, the biocide composition of the invention can be produced with water as a favorable medium, if necessary. The addition of emulsifiers, organic solvents, and/or stabilizers is thus not necessary. Moreover the invention makes it possible to match the composition to specific goals by adding further active substances, for example, in the sense of an increased biocidal activity, improved long-term protection of the substances infected by microorganisms, improved compatibility with the substances to be protected, or improved toxicological or ecotoxicological behavior (lines 49-54, column 4).

¹ US Patent 6,361788

The reference further teaches biocide composition of the invention contains 2-methylisothiazolin-3-one and 1, 2-benzisothiazolin-3-one, normally in a weight ratio of (50-1): (1-50), preferably in a weight ratio of (15-1): (1-8), in particular in a weight ratio of (4-1) (1-4). A weight ratio of 1:1 is particularly preferred. In the biocide composition the 2-methylisothiazolin-3-one and the 1,2-benzisothiazolin-3-one are present in a total concentration of preferably 0.5 to 50% by wt, in particular 1 to 20% by wt, particularly preferred 2.5 to 10% by wt, in each case relative to the total biocide composition.

The reference further teaches that the biocide composition of the invention can be used in very different fields. It is suitable, for example, for use in paints, plasters, lignosulfonates, chalk suspensions, adhesives, photochemicals, casein-containing products, starch-containing products, bituminous emulsions, surfactant solutions, motor fuels, cleaning agents, cosmetic products, water circulating systems, polymer dispersions, and cooling lubricants, against attack by, for example, bacteria, filamentous fungi, yeasts, and algae. The reference teaches a list of some active biocidal compounds, which includes presently claimed biocidal compound such as benzyl alcohol, (claim 8), sorbic acid, benzoic acid, phenoxy ethanol, (claim 1) and many others. See column 3 and 4.

Instant claims differ from the reference in claiming synergistic combination in different ratios of the components.

It would have been obvious to one skilled in the art to prepare additional beneficial compositions for inhibiting synergistically the growth of microorganisms by using the teachings of the prior art to combine 2-methylisothiazoline and one or two active biocidal component.

The ratio of the two components to find the synergism is a routine expectation for the one who is skilled in the art because the biocide composition of the reference teaches combination of at least two active biocidal substances, one of which is 2-methylisothiazolin-3-one. The composition can contain one or more other active biocidal substances selected according to the field of application. Specific examples are listed in columns 3 and 4. Present invention does mention only one biocide 2-methyl-3-isothiazolone, however, the term "comprising" allows other components to be added. Other biocides listed in column 3 and 4 include the compounds which are presently claimed. The combination with zinc pyrithione and climbazole is not mentioned specifically in the prior art however, Applicants specification discloses that all the biocides are commercially available. All the compounds are individually known as biocides. The reference teaches the synergistic combination of 2-methylisothiazoline and various other active biocidal substances. Therefore, using 2-methyl-3 isothiazolone for synergism would have been obvious to one skilled in the art at the time invention was made.

The motivation to prepare synergistic biocidal compositions and method of inhibiting microorganisms as presently claimed has been provided by the prior art. The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *>Invitrogen Corp. v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003) ("The transition 'comprising' in a method claim indicates that the claim is open-ended and allows for additional steps."); *< Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still

form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts").

See *Ex parte Quadranti*, 25 USPQ2d 1071 (Bd. Pat. App. & Inter. 1992) where it was held that "Use of materials in combination, each of which is known to function for intended purpose, is generally held to be *prima facie* obvious, and in instant case, use of combination of herbicides is so notoriously well known as to be capable of being taken by official notice; generalizations such as Colby formula are not particularly useful in determining whether synergism has been demonstrated, since formula inherently results in expectation of less than additive effect for combination of herbicides, since there is no evidence that such approach is considered valid by significant number of ordinarily skilled workers in relevant area of technology, and since it could be reasonably argued that in most cases, additive or better than additive results could be expected for combination of herbicides."

"There is no single, appropriate test for determining whether synergism has been demonstrated for chemical combination; rather, facts shown in each case must be analyzed to determine whether chosen method has clearly and convincingly demonstrated existence of synergism or unobvious result".

"Assuming arguendo that the differences in values presented are statistically significant, there is no evidence that they represent a true, practical advantage. *In re Freeman*, 474 F.2d 1318, 177 USPQ 139 (CCPA 1973); *In re Klosak* , 455 F.2d 1077, 173 USPQ 14 (CCPA 1972);

In re D'Ancicco, 439 F.2d 1244, 169 USPQ 303 (CCPA 1971). Also, prescinding from the Colby formula test, which as we have already indicated is at best controversial and in our view probably invalid, there is no evidence that the differences are unexpected. In re Merck, 800 F.2d 1091, 231 USPQ 375 (Fed.Cir. 1986); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed.Cir. 1985); In re Freeman, *supra*".

In absence of any criticality and/or unexpected results presently claimed invention would have been *prima facie* obvious to one skilled in the art.

In the light of the forgoing discussion, the Examiner's ultimate legal conclusion is that the subject matter defined by the instant claims would have been obvious within the meaning of 35 U.S.C. 103(a).

Data in the Specification

The data presented in the specification was considered. The data presented covers the combination of 2-isothiazole and benzoic acid (Table 1), citric acid (Table 2), sorbic acid (Table 3), 1,2-dibromo-2,4-dicyclobutane (Table 4), 1,3-dimethylol-5,5-dimethylhydantion (Table 5), henoxyethanol (Table 6), zinc pyrithione (Table 7), climbazole (Table 8), and benzyl alcohol (Table 9). The data presented is for certain organisms; the claimed invention is not limited to those organisms. Further, the synergistic combinations have been taught by the prior art. The synergism as claimed would have been expected for reasons cited above.

(10) Response to Argument

Examiner respectfully disagree that claims cannot be obvious over the disclosure of the references, and it is not necessary to demonstrate synergy of the composition with respect to every possible organism. Examiner has shown that the synergistic combination of 2-methylisothiazolin-3-one and various other active biocidal substances is improved in its components interact synergistically and therefore can be used in lower concentrations when used simultaneously, compared to the concentrations necessary in the case of the individual components. Thus, humans and the environment are exposed to less pollution and the costs of controlling harmful microorganisms are reduced. This object is achieved by the prior art by means of a biocide composition having at least two active biocidal substances, one of which is 2-methylisothiazolin-3-one. The reference further teaches that biocide composition of the invention has the advantage that it can replace active substances used until now in practice, but suffering from disadvantages with respect to health and the environment, e.g., 5-chloro-2-methylisothiazolin-3-one.

Moreover, Applicant argue that the reference does not disclose combinations comprising 2-methyl-3" isothiazolone and zinc pyrithione, climbazole or citric acid, as recited in claims 7, 8 and 11, respectively. The combination with zinc pyrithione and climbazole is not mentioned specifically in the prior art however, Applicants specification discloses that all the biocides are commercially available. All the compounds are individually known as biocides. The reference teaches the synergistic combination of 2-methylisothiazoline and various other active biocidal substances Therefore, using 2-methyl-3 isothiazolone for synergism would have been obvious to one skilled in the art at the time invention was made. The transitional term "comprising", which

is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *>Invitrogen Corp. v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003) ("The transition 'comprising' in a method claim indicates that the claim is open-ended and allows for additional steps."); *<Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts").

In summary Examiner concludes that claims and specification does not provide any new concept or patentable invention for the reasons cited above.

See KSR Supreme Court of United States Decision (Decided April 30, 2007, KSR INTERNATIONAL CO. v. TELEFLEX INC. et al. No. 04-1350) where it states that (1) "However, the issue is not whether a person skilled in the art had the motivation to combine the electronic control with an adjustable pedal assembly, but whether a person skilled in the art had the motivation to attach the electronic control to the support bracket of pedal assembly". (2) "the results of ordinary innovation are not the subject of exclusive rights under the patent laws".

See *Ex parte Quadranti*, 25 USPQ2d 1071 (Bd. Pat. App. & Inter. 1992) where it has been held that "Use of materials in combination, each of which is known to function for intended purpose, is generally held to be *prima facie* obvious, and in instant case, use of combination of

herbicides is so notoriously well known as to be capable of being taken by official notice; generalizations such as Colby formula are not particularly useful in determining whether synergism has been demonstrated, since formula inherently results in expectation of less than additive effect for combination of herbicides, since there is no evidence that such approach is considered valid by significant number of ordinarily skilled workers in relevant area of technology, and since it could be reasonably argued that in most cases, additive or better than additive results could be expected for combination of herbicides.”

“There is no single, appropriate test for determining whether synergism has been demonstrated for chemical combination; rather, facts shown in each case must be analyzed to determine whether chosen method has clearly and convincingly demonstrated existence of synergism or unobvious result”. “Assuming arguendo that the differences in values presented are statistically significant, there is no evidence that they represent a true, practical advantage. In re Freeman, 474 F.2d 1318, 177 USPQ 139 (CCPA 1973); In re Klosak, 455 F.2d 1077, 173 USPQ 14 (CCPA 1972); In re D'Ancicco, 439 F.2d 1244, 169 USPQ 303 (CCPA 1971). Also, prescinding from the Colby formula test, which as we have already indicated is at best controversial and in our view probably invalid, there is no evidence that the differences are unexpected. In re Merck, 800 F.2d 1091, 231 USPQ 375 (Fed.Cir. 1986); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed.Cir. 1985); In re Freeman, *supra*”.

See KSR Supreme Court of United States Decision (Decided April 30, 2007, KSR INTERNATIONAL CO. v. TELEFLEX INC. et al. No. 04-1350) where it states that (1) “However, the issue is not whether a person skilled in the art had the motivation to combine the electronic control with an adjustable pedal assembly, but whether a person skilled in the art had

the motivation to attach the electronic control to the support bracket of pedal assembly". (2) "the results of ordinary innovation are not the subject of exclusive rights under the patent laws".

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



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